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HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER
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RUSSELL, WANDA Z

ART UNIT	PAPER NUMBER
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2616

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/806,628

Applicant(s)

MODI ET AL.

Examiner

Wanda Z. Russell

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/23/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) ✓
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08) ✓  
Paper No(s)/Mail Date See Continuation Sheet.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date : 10/13/2005, 12/02/2005, 8/10/2006.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1-3, 7-9, 12-18, 23-30, and 37-38** are rejected under 35 U.S.C. 102(e) as being anticipated by Elzur et al. (Pub No. US 2004/0093411 A1).

For **claim 1**, Elzur et al. teach a system (Fig. 6), comprising:

an interface logic (SCSI, [0043], line 1. For SCSI, see [0006], lines 2-3)

configured to pre-configure a topology of nodes (Fig. 6, and [0041], line 5. For iSCSI, see [0010], line 9) to communicate via a preferred networking protocol (TCP-Fig. 6);

a mapping logic (CDB, [0043], line 2. For CDB, see [0008], lines 5-6) operably connected to the interface logic, the mapping logic being configured to produce a mapping (context for a connection, [0043], line 2) between a resource located on a first node and a port located on the first node (computer-Fig. 6), to selectively provide to a second node (storage-Fig. 6) a mapping data that describes the mapping, and to selectively establish a connection that facilitates the second node accessing the resource through the port ([0041], 4<sup>th</sup> line from the end) using the preferred networking protocol (Fig. 6); and

a connection management logic (CNC, [0024], line 2) operably connected to the mapping logic and the interface logic, the connection management logic being configured to control whether the mapping logic will provide the mapping data and establish the connection ([0043], line 12).

For **claim 2**, Elzur et al. teach the system of claim 1, where to pre-configure the topology of nodes the interface logic acquires a node identifier (CDB, and context for a connection, [0043], line 2) that facilitates recording whether a node is a member of a pre-configured topology, acquires a topology configuration choice data concerning how the pre-configured topology is to be configured, pre-configures the topology based, at least in part, on the node identifier and the topology configuration choice data, and provides a topology data concerning the topology to a member of the topology ([0041], lines 5-7).

For **claim 3**, Elzur et al. teach the system of claim 2, where the connection management logic exerts its control based, at least in part, on the topology data and a node identifier received from the second node (computer to storage –Fig. 6, and [0043], lines 12-13).

For **claim 7**, Elzur et al. teach the system of claim 2, where the topology data describes one or more of, which nodes are members of the topology, a preferred computer networking protocol to be employed between members of the topology, a preferred path to be employed for communications between members of the topology, a fallback networking protocol to be employed between members of the topology, and a

Art Unit: 2616

fallback path to be employed for communications between members of the topology (Fig. 6).

For **claim 8**, Elzur et al. teach the system of claim 1, where the interface logic is further configured to control one or more resource control actions including, enabling a protocol off-load capability, aging off-loaded connections, converting idle connections to a non-off-load mode, and converting connections between an RDMA and a non-RDMA mode (Fig. 11, and [0028], line 2).

For **claim 9**, Elzur et al. teach the system of claim 1, where the mapping logic comprises a port mapper configured to listen on a well-known port for one or more of, a request for mapping data, and a connection request (Fig. 6, and [0043], line 2).

For **claim 12**, Elzur et al. teach the system of claim 1, where the resource supports one or more of, remote direct memory access (RDMA) (Fig. 9) between the first node and the second node, and protocol off-loading at the first node.

For **claim 13**, Elzur et al. teach the system of claim 1, where one or more of, the interface logic, the mapping logic, and the connection management logic are located on one or more of, a network interface card (NIC) ([0011], line 10), and a remote direct memory access (RDMA) NIC (RNIC) ([0052], line 1).

For **claim 14**, Elzur et al. teach the system of claim 2, where the connection management logic exerts its control based on analyzing the topology data and one or more of, time of day, network traffic, load, and resource availability (computer to storage –Fig. 6, and [0043], lines 12-13).

For **claim 15**, Elzur et al. teach the system of claim 1, where the connection management logic operates at a session layer associated with the first networking protocol (TCP-TP, [0033], line 7).

For **claim 16**, Elzur et al. teach the system of claim 15, where the first networking protocol includes a Transmission Control Protocol (TCP) transport layer and an Internet Protocol (IP) network layer (TCP-TP, [0033], line 7).

For **claim 17**, Elzur et al. substantially teach a computer (Fig. 6) configured with a pre-configured topology connection management system, the system comprising:

an interface logic (SCSI, [0043], line 1. For SCSI, see [0006], lines 2-3) configured to pre-configure a topology of nodes (Fig. 6, and [0041], line 5. For iSCSI, see [0010], line 9) to communicate via a preferred networking protocol (TCP-Fig. 6) or a fallback networking protocol, where to pre-configure the topology of nodes the interface logic acquires a node identifier that facilitates recording whether a node is a member of a pre-configured topology, acquires a topology configuration choice data concerning how the pre-configured topology is to be configured, pre-configures the topology based, at least in part, on the node identifier and the topology configuration choice data, and provides a topology data concerning the topology to a member of the topology;

a mapping logic (CDB, [0043], line 2. For CDB, see [0008], lines 5-6) operably connected to the interface logic, the mapping logic being configured to produce a mapping (context for a connection, [0043], line 2) between a resource located on a first node and a port located on the first node, to selectively provide to a second node (storage-Fig. 6) a mapping data that describes the mapping between the resource and

the port, and to selectively establish a connection between the first node and the second node, where the connection facilitates the second node accessing the resource through the port using the preferred networking protocol (Fig. 6); and

a connection management logic (CNC, [0024], line 2) operably connected to the mapping logic and the interface logic, the connection management logic being configured to control whether the mapping logic will provide the mapping data to the second node, and whether the mapping logic will establish the connection ([0043], line 12), where the connection management logic exerts its control based, at least in part, on the topology data and a node identifier received from the second node.

For **claim 18**, Elzur et al. teach a method (Title), comprising:

acquiring (Fig. 7) a set of node identifiers (CDB, [0043], line 2) associated with nodes to be considered for inclusion in a pre-configured topology of nodes (Fig. 6 and 7) that can communicate within the topology using a preferred computer networking protocol (TCP-Fig. 6);

establishing the pre-configured topology of nodes (Fig. 6 and 7); and

making (Fig. 6) available a membership data (data center, [0023], line 2) concerning the pre-configured topology of nodes.

For **claim 23**, Elzur et al. teach a method (Title), comprising:

acquiring (Fig. 7) a set of node identifiers (CDB, [0043], line 2) associated with nodes to be considered for inclusion in a pre-configured topology of nodes (Fig. 6 and 7) that can communicate within the topology using a preferred computer networking protocol (TCP-Fig. 6);



Art Unit: 2616

establishing the pre-configured topology of nodes (Fig. 6 and 7);

distributing ([0075], line 4) a membership data (data center, [0023], line 2)

concerning the pre-configured topology of nodes to nodes that are in the pre-configured topology of nodes (Fig. 6 and 7);

selectively adding or deleting ([0075], line 4. It is inherent that a computer system can add or delete a node from the pre-configured topology of nodes and redistribute the membership data) a node from the pre-configured topology of nodes and redistributing the membership data, in response to selectively adding or deleting the node, redistributing the membership data; and

selectively managing ([0075], line 4. It is inherent that a computer system can manage the network resource and redistribute the membership data) a computer networking resource, and in response to selectively managing the computer networking resource, redistributing the membership data.

For **claim 24**, it is a method claim corresponding to claim 4, therefore it is rejected for the same reason above.

For **claim 25**, it is a method claim corresponding to claim 1 and 6, therefore it is rejected for the same reason above.

For **claim 26**, it is a method claim corresponding to claim 8, therefore it is rejected for the same reason above.

For **claim 27**, Elzur et al. teach a method (Title), comprising:

in a first node, receiving (computer and storage connection—Fig. 6, and [0043], lines 12-13) from a second node, via an open computer networking protocol (TCP—Fig.

Art Unit: 2616

6), a request to establish a connection between the first node and the second node via the open computer networking protocol, where the connection facilitates the second node accessing a resource associated with the first node (CNC, [0024], line 2);

determining (CNC, [0024], line 2) whether the second node is a member of a pre-configured topology that includes the first node by examining a node identifier associated with the second node; and

selectively not establishing (CNC, [0024], line 2) the connection between the first node and the second node via the open computer networking protocol if it is determined that the second node is not a member of the pre-configured topology that includes the first node.

For **claim 28**, Elzur et al. teach the method of claim 27, where the method is performed by a session layer logic associated with the open computer networking protocol (TCP-TP, [0033], line 7).

For **claim 29**, Elzur et al. teach the method of claim 27, where the open computer networking protocol includes a Transmission Control Protocol (TCP) transport layer and an Internet Protocol (IP) network layer (TCP-TP, [0033], line 7).

For **claim 30**, it is a computer-readable medium storing processor executable instructions claim corresponding to method claim 27-29, therefore it is rejected for the same reason above.

For **claim 37**, it is a means claim corresponding to method claim 27, therefore it is rejected for the same reason above.

For **claim 38**, it is a programming interfaces embodied on a computer-readable medium claim corresponding to method claim 27 or 37, therefore it is rejected for the same reason above.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 4-6, 10, 19-22, and 31-36** are rejected under 35 U.S.C. 103(a) as being unpatentable over Elzur et al. (Pub No. US 2004/0093411 A1), in view of Delany et al. (U.S. Patent 6,658,454 B1).

For **claim 4**, Elzur et al. substantially teach everything claimed as applied above (see claim 1 and 2). In addition, Elzur et al. teach The system of claim 2, where a node identifier comprises one or more of, an Internet Protocol (IP) address ([0033], line 8), a value stored in one or more of a network interface card (NIC) ([0011], line 10) hardware, firmware, and software ([0006], lines 18-19), a value stored in one or more of a remote direct memory access (RDMA) (Fig. 9) NIC (RNIC) ([0052], line 1) hardware, firmware, and software, and a password.

However, Elzur et al. fail to specifically teach a value stored on a universal serial bus (USB) token.

Delany et al. teach a value stored on a universal serial bus (USB) token (col. 7, line 47).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Elzur et al. with Delany et al. to obtain the invention as specified, for an alternative and conventional storage medium.

For **claim 5**, Elzur et al. substantially teach everything claimed as applied above (see claim 1).

However, Elzur et al. fail to specifically teach a graphical user interface (GUI) system.

Delany et al. teach a graphical user interface (GUI) (col. 8, line 29) system.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Elzur et al. with Delany et al. to obtain the invention as specified, for receiving user commands and data in a graphical fashion.

For **claim 6**, Elzur et al. substantially teach everything claimed as applied above (see claim 1 and 2).

However, Elzur et al. fail to specifically teach the system of claim 2, where to pre-configure the topology of nodes, the interface logic determines which nodes are members of the topology, establishes a preferred computer networking protocol to be employed by members of the topology, establishes a preferred path to be employed for data communications between members of the topology, establishes a fallback networking protocol to be employed by members of the topology, and establishes a fallback path to be employed for communications between members of the topology.

Delany et al. teach the system of claim 2, where to pre-configure the topology of nodes, the interface logic determines which nodes are members of the topology,

establishes a preferred computer networking protocol to be employed by members of the topology, establishes a preferred path to be employed for data communications between members of the topology, establishes a fallback networking protocol (Abstract, line 18) to be employed by members of the topology, and establishes a fallback path to be employed for communications between members of the topology (col. 15, lines 28-30).

For **claim 10**, Elzur et al. substantially teach everything claimed as applied above (see claim 1).

However, Elzur et al. fail to specifically teach the system of claim 1, the mapping logic being further configured to facilitate establishing a fallback connection between the first node and the second node according to a second networking protocol, the second networking protocol being different from the first networking protocol, where the second node may request the fallback connection after the mapping logic has been controlled to not provide the mapping data to the second node or the mapping logic has been controlled to prevent the establishment of a connection between the first node and the second node using the first networking protocol.

Delany et al. teach the system of claim 1, the mapping logic being further configured to facilitate establishing a fallback connection between the first node and the second node according to a second networking protocol, the second networking protocol being different from the first networking protocol, where the second node may request the fallback connection (fallback MTA, Abstract, line 18) after the mapping logic has been controlled to not provide the mapping data to the second node or the mapping

Art Unit: 2616

logic has been controlled to prevent the establishment of a connection between the first node and the second node using the first networking protocol (col. 11, lines 3-15).

For **claim 19**, Elzur et al. substantially teach everything claimed as applied above (see claim 18).

However, Elzur et al. fail to specifically teach the method of claim 18, where the set of node identifiers are acquired from one or more of, a human user through a graphical user interface (GUI), a scripting-based system, and a policy-based system.

Delany et al. teach a graphical user interface (GUI) (col. 8, line 29) system.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Elzur et al. with Delany et al. to obtain the invention as specified, for receiving user commands and data in a graphical fashion.

For **claim 20**, Elzur et al. substantially teach everything claimed as applied above (see claim 18 and 19). In addition, Elzur et al. teach The system of claim 2, where a node identifier comprises one or more of, an Internet Protocol (IP) address ([0033], line 8), a value stored in one or more of a network interface card (NIC) ([0011], line 10) hardware, firmware, and software ([0006], lines 18-19), a value stored in one or more of a remote direct memory access (RDMA) (Fig. 9) NIC (RNIC) ([0052], line 1) hardware, firmware, and software, and a password.

However, Elzur et al. fail to specifically teach a value stored on a universal serial bus (USB) token.

Delany et al. teach a value stored on a universal serial bus (USB) token (col. 7, line 47).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Elzur et al. with Delany et al. to obtain the invention as specified, for an alternative and conventional storage medium.

For **claim 21**, Elzur et al. substantially teach everything claimed as applied above (see claim 18). In addition, Elzur et al. teach

determining (data center, [0023], line 2) node membership in the pre-configured topology;

establishing (TCP-Fig. 6) a preferred computer networking protocol to be employed by members of the topology;

establishing (data center, [0023], line 2) a preferred path to be employed for communications between members of the topology; and

recording (CDB, [0043], line 2) the topology membership, preferred computer networking protocol, and preferred path (it is inherent that the recording process can record any data including fallback computer networking protocol, and fallback path in the membership data).

However, Elzur et al. fail to specifically teach establishing a fallback path to be employed for communications between members of the topology; and recording the topology membership, preferred computer networking protocol, preferred path, fallback computer networking protocol, and fallback path in the membership data.

Delany et al. teach establishing a fallback path to be employed for communications between members of the topology (col. 15, lines 28-30).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Elzur et al. with Delany et al. to obtain the invention as specified, for failure analysis and more reliable data delivery.

For **claim 22**, it is a computer-readable medium storing processor executable instructions claim corresponding to method claim 18 and 21, therefore it is rejected for the same reason above.

For **claim 31**, it is a method claim corresponding to method claim 1 and 10, therefore it is rejected for the same reason above.

For **claim 32**, it is a method claim corresponding to method claim 1, therefore it is rejected for the same reason above.

For **claim 33**, it is a method claim corresponding to method claim 4, therefore it is rejected for the same reason above.

For **claim 34**, it is a method claim corresponding to method claim 4, therefore it is rejected for the same reason above.

For **claim 35**, it is a method claim corresponding to method claim 16, therefore it is rejected for the same reason above.

For **claim 36**, it is a method claim corresponding to method claim 31, therefore it is rejected for the same reason above.

5. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Elzur et al. (Pub No. US 2004/0093411 A1), in view of Delany et al. (U.S. Patent 6,658,454 B1), and Fair (Pub No. US 2005/0154825 A1).



Elzur et al. and Delany et al. substantially teach everything claimed as applied above (see claim 1 and 10). However, they fail to specifically teach the connection management logic being configured to block access to a first resource on the first node via the preferred networking protocol and to permit access to a second resource on the first node via a fallback networking protocol.

Fair teaches the connection management logic being configured to block access ([0042, line 11, and [0045]) to a first resource on the first node via the preferred networking protocol and to permit access to a second resource on the first node via a fallback networking protocol.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine Elzur et al. with Delany et al. and Fair to obtain the invention as specified, for more reliable data delivery.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wanda Z. Russell whose telephone number is (571) 270-1796. The examiner can normally be reached on Monday-Thursday 9:00-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WZR

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*Seema S. Rao*  
8/2/07

SEEMA S. RAO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600